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Nuclear-Powered Soviet Satellite Is Expected to Crash This Month

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WASHINGTON, Jan. 5 — The United States said today that a nuclear-powered Soviet reconnaissance satellite had apparently run into problems and would probably crash somewhere on the earth's surface before the end of the month.

A statement issued by the Defense Department said the satellite, known as Cosmos 1402, was similar to an earlier Cosmos satellite that crashed in an uninhabited area of northern Canada in January 1978, causing minor radiation contamination. Administration officials said the Cosmos 1402 was believed to contain about 100 pounds of enriched uranium for a reactor that provides electricity for its radar, which observes American naval operations.

Officials emphasized that the danger of the satellite was not from the possibility of an explosion but from the radioactivity of its nuclear-fission products. Strontium 90, for example, builds up in the reactor as its uranium fuel is consumed.

If it came down in a densely populated area, it could cause radiation problems for those in the immediate vicinity, officials said. But as of today, they said, it was impossible to predict exactly where it would land or the exact date.

The brief Pentagon statement said:

"A portion of a Soviet Cosmos military satellite which we believe contains a nuclear reactor as its power supply will probably re-enter the earth's atmosphere in late January. At this time, we do not know where it will land nor do we know precisely when to expect re-entry. A similar satellite landed in northern Canada in early 1978. We are monitoring this situation carefully."

Moscow Is Asked for Information

Administration officials said foreign governments had already been advised of the faulty Soviet satellite and the Soviet Government had been asked for information. One official said the Soviet Union had confirmed that its ground controllers had lost control of Cosmos 1402.

Traveling in an orbit with an inclination of 64.9 degrees relative to the equator, the satellite passes over most of North America south of Fairbanks, Alaska, most of the Soviet Union, and all of China, Africa, South America and Australia, The Associated Press reported.

The North American Aerospace Defense Command in Colorado Springs routinely monitors the location of all Soviet vehicles in space and, late last month, an official said, there were initial signs of trouble involving the Cosmos 1402, which was launched on Aug. 30, 1982.

Officials said Cosmos reconnaissance satellites are usually put into orbit between 150 and 170 miles from the earth.

The satellites usually stay on station for several months and when they finish their mission are split up on command from Soviet stations. The nuclear reactor is boosted into an orbit more than 500 miles high, where it can remain in space for hundreds of years while the radioactive material slowly decays, officials said.

Information From Britain

Officials did not provide details on how they learned of the satellite's problems, but a private British astronomer, Geoffrey Perry, who makes a hobby of tracking satellites from Kettering, England, said that "the Cosmos malfunctioned on Dec. 28."

"It split into three component parts as normal," he said, "but instead of the nuclear reactor being raised to the 'safe' orbit at 950 kilometers, on this occasion it remained in the low orbit at 250 kilometers, from where it will decay naturally in the next few weeks unless the Russians are able to remedy the fault." The higher orbit is 590 miles high and the lower one is 155 miles high.

He said that if it landed in an inhabited area, "it could prove very dangerous, but I don't want to speculate too much on that."

On Jan. 24, 1978, the Cosmos 954 satellite crashed in a remote area of Canada's Northwest Territories more than a month after the Carter Administration first received intelligence information suggesting that the satellite would enter the atmosphere instead of being boosted into a high orbit.

The Administration, to reduce the possibility of panic, did not tell the public of the malfunction until just before the satellite crashed.

U.S. Used Different Type

President Carter, at a news conference on Jan. 30, said, "I think we need to have more rigid safety precautions assured among all nations in earth-orbiting satellites; in fact, we would be glad to forgo the deployment of any such satellites altogether, and we will pursue that option with the Soviet Union."

Although the United States at one time used nuclear material as a heat source to generate electricity in such satellites, it no longer does, officials said. American efforts to obtain agreement on banning such satellites got nowhere, officials said.

President Reagan was informed of the satellite malfunction on Tuesday, an official said.

There were no plans to make a public announcement on the satellite at this time, a State Department official said, because of the uncertainty of when or where it would land. But a statement was issued after some reporters learned of it from officials, he said.

After the crash of Cosmos 954, the Canadian Government made a major effort to recover all the radioactive debris that was scattered over several hundred square miles.

A Canadian spokesman said two years ago that the Soviet Union agreed to pay $3 million of the cleanup cost, which was estimated at $6 million. The spokesman said that "thousands" of radioactive fragments were recovered and isolated.